

Abstract of the Disclosure

A precursor delivery system includes a flow path from a precursor container to a reaction space of a thin film deposition system, such as an atomic layer deposition (ALD) reactor. A staging volume is preferably established between the precursor container and the reaction space for receiving at least one dose of the precursor material from the precursor container, from which a series of pulses is released toward the reaction space. The precursor material is typically vaporized after loading it in the precursor container by heating or reducing the pressure inside the precursor container. A vacuum line is preferably coupled to the precursor container and bypasses the reaction space for reducing pressure inside the precursor container without drawing particles into the reaction space. A high conductivity particle filter having inertial traps may be included, preferably between the precursor container and a staging volume, for filtering particles from the precursor material.